



PHOTOGRAPHY FAQ

Q Digital single lens reflex (SLR) cameras seem to be the choice of professionals and keen amateurs, but what's the difference between these and normal digital cameras?

A Digital SLR cameras are digital equivalents of film SLRs and work in roughly the same way. When you look through the viewfinder, you look through the lens, so what you see is what appears in the frame. If you don't have an SLR camera, the viewfinder has its own optics, so you don't see exactly what is photographed.

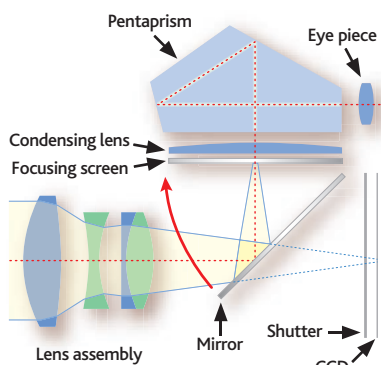
In an SLR camera, a mirror behind the lens directs the image into a pentaprism, which reflects it into the eye piece. When you take a picture, the mirror moves out of the way and the image is projected on to the camera's charge-coupled device (CCD), or film in a film camera.

Digital SLRs, like their film equivalents, have interchangeable lenses. For example, you can fit a telephoto lens for close-ups. The lenses that come with the camera are not usually very good, so replacing them improves image quality. Read the instructions, as you can't use all lenses.

Digital SLRs have larger CCDs than compact digital cameras. This results in better colour reproduction, higher-quality images, a shallower depth of field and wider viewing angles. There are disadvantages, though. First, dust can get inside the camera as the lens is removed, so you should clean it regularly to get the best image quality. Second, the cameras are more expensive. Unless you're a very keen photographer, you're better off buying a digital camera with a fixed, manual-focus lens, such as the Sony Cyber-shot DSC-H1 reviewed on the right.

The cross-section of an SLR camera below shows how light passes through the lens assembly, is reflected by the mirror and is projected on the matt focusing screen. A condensing lens and internal reflections in the pentaprism make the image appear in the eye piece. When you take a photo, the mirror moves in the direction of the arrow, the focal plane shutter opens and the image is projected on the CCD exactly as it appeared on the focusing screen.

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REVIEW DIGITAL CAMERA

SONY Cyber-shot DSC-H1

RATING ★★★★★

PRICE £285 inc VAT

SUPPLIER www.bestcameras.co.uk

DETAILS www.sony.co.uk

The large barrel that protrudes from the front of Sony's Cyber-shot DCS-H1 camera houses a bright, image-stabilised 12x zoom lens. This gives it a zoom range equivalent to between 36mm and 432mm in a 35mm camera, which is more than enough to take you right into the middle of the action. An image-stabilising mechanism in the H1 enables you to shoot at full zoom without a tripod, although it's not as effective as similar systems fitted to Canon's S2 IS and Panasonic's FZ5 cameras.

Build quality is high, and the H1 feels like a far more expensive camera. It's heavy, but the chunky grip and well-placed shutter button make the H1 comfortable to use, although the zoom rocker is a little small. Most of the back is occupied by the 2½" screen, but you may find the comfortable LCD viewfinder more natural to use for framing your shots. This camera has more buttons than most, but it's easy to use thanks to an effective and easily navigable menu system. The H1 comes with two rechargeable AA batteries. These will last for about 320 shots between charges if you use the LCD viewfinder, or 290 using the screen.

At 5-megapixels, the sensor fitted in the H1 is typical of an ultra-zoom digital camera. It records photos at a maximum resolution of 2,592x1,944,



providing enough detail for 6x8" prints. The H1 takes warm, rich and precise photos, with little purple fringing. Colours are accurate, although we found that reds were a little over-saturated and the overall level of sharpening was a bit harsh. Thankfully saturation, contrast and sharpening can be tailored on the camera.

The H1 is a fine camera and it won't disappoint. Unfortunately, this is a crowded field, and we found both Canon's S2 IS and Panasonic's FZ5 to be slightly better.

David McKinnon

✓ Comfortable, effective and affordable

✗ Bettered by two similar cameras

SPECIFICATIONS 2,592x1,944 resolution, 12x (36-432mm equivalent), 16MB internal memory, takes Sony Memory Stick. **Part code** DSC-H1

HOTLIST DIGITAL CAMERA

CANON PowerShot S2 IS

RATING ★★★★★

PRICE £333 inc VAT

SUPPLIER www.dabs.com

DETAILS www.canon.com

Canon's PowerShot S2-IS might weigh just over half a kilo, but it's incredibly comfortable to use. Its bright 12x zoom lens is mechanically stabilised, which helps the 5-megapixel sensor produce sharp, blur-free pictures even when shooting at full zoom from your hand. It takes rich, warm stills, and records movies at 640x480 and 30fps. A stunning macro mode lets you focus on objects right up to the lens surface. If you want a camera that has a big zoom lens and plenty of shooting options, this is the one to buy.



SPECIFICATIONS 2,560x1,920 resolution, stabilised 12x zoom lens (36-432mm), 16MB SD card. **Part code** 9883A007AA

HOTLIST TRANSPARENCY SCANNER

EPSON Perfection 4180 Photo

RATING ★★★★★

PRICE £135 inc VAT

SUPPLIER www.savastore.com

DETAILS www.epson.co.uk

If you want to get the best from your photos and slides when transferring them to your PC, you have to aim for maximum scanning resolution. The Perfection 4180 Photo scans at a maximum of 4,800x9,600dpi, so you can be sure you'll capture every last detail. It can scan up to six slides at once, so it shouldn't take too long to digitise your entire collection.



SPECIFICATIONS 4,800x9,600 optical resolution, 35mm, slide, 120-roll transparency adaptor, USB Hi-Speed interface. **Part code** B11B170024



REVIEW DIGITAL CAMERA

NIKON

D50

RATING ★★★★★

PRICE £530 inc VAT

SUPPLIER www.cameras2u.comDETAILS www.nikon.co.uk

Compact digital cameras have largely replaced 35mm film-based compact cameras as the holiday snappers of choice. Until now, though, the high cost of digital SLR cameras has forced many amateur and semi-professional photographers to stick with film SLR cameras (see FAQ, left). At just over £500 for a single-lens kit, Nikon's D50 is one of several digital SLR cameras to provide the versatility and high image quality of an SLR camera at a more consumer-friendly price.

Behind the removable lens and the swinging mirror common to all SLR cameras is a 6-megapixel sensor, which records photos at a maximum resolution of 3,008x2,000. Compact cameras tend to record photographs in a 3:4 aspect ratio but the D50, like all digital SLRs, records at a traditional 35mm frame ratio of 3:2, so prints on normal photo paper don't have to be cropped.

At 23.7x15.5mm, the sensor is significantly bigger than those found in most 6-megapixel compact cameras. This extra sensing area means that each pixel is larger and more sensitive to different levels of light intensity. Photos taken with the D50 are exceptionally rich and detailed and exhibit a subtlety of colour that's not found in a compact camera.

It also allows for a wider ISO range than compact cameras have. The D50 can emulate the sensitivity of ISO 200, 400, 800 and 1,600 film. At 800 noise starts to become evident, although on-camera noise reduction is surprisingly efficient, while at 1,600 you can shoot in a darkened room without a flash, but the photos are grainy.

On the default settings, the D50 delivers punchy, slightly saturated colours. These are great for instant printing or viewing, but if you're more interested in colour accuracy, you can switch to true sRGB or Adobe sRGB, which give truer colour representation.

The D50 uses a Nikon AF/F D-type lens mount that accepts any similar lens you might already have. Any that are not designed specifically for use with digital cameras will give an added magnification, as only the centre portion of the captured scene falls directly on to the sensor. The 18-55mm lens supplied with the D50 kit is fine for starting out, but like most kit lenses, it's unexceptional.

This is one of the heaviest digital SLR cameras around, but it feels comfortable to hold. The shutter button is perfectly placed at the front of the grip and the command dial, which adjusts most of the photographic controls, falls right beneath your thumb. The menu system is navigated using a cheap-feeling four-way direction pad, and a row of well labelled buttons on the left of the bright screen provide quick access to certain functions and the menu. The mode dial is well placed for your right hand and provides access to the camera's main shooting modes.

In fully automatic mode, the D50 turns out excellent photos, but for those who want to get more hands on, the typical range of cameras modes



are all here. Shutter speed goes from 1/4000 to 30 seconds, while the kit lens allows for f3.5 at 18mm wide-angle and f5.6 at 55mm telephoto.

The D50 feels solid and expensive, with an exemplary build and finish. It's easy to use and takes superb photos even before you have mastered the full gamut of controls. At this price, it should be on every amateur photographer's Christmas list.

David McKinnon

✓ First-class build quality; affordable digital SLR camera

✗ Difficult to master

SPECIFICATIONS 3,008x2,000 resolution, 18-55mm lens (27-82mm equivalent), takes SD memory. **Part code** D50(UK) 18-55KIT SI

HOTLIST SCANNER

MUSTEK

Be@rpaw 4800TA Pro II

RATING ★★★★★

PRICE £60 inc VAT

SUPPLIER www.dabs.comDETAILS www.mustek.co.uk

It may have been around for a while, but this scanner still offers the entry-level buyer above-average transparency results. It's easy to operate, with a simplified control panel for those who find the TWAIN interface too much. Scan quality isn't perfect, it's not as fast as many other scanners and there are no Mac drivers, but it's a great value all-rounder.

SPECIFICATIONS 2,400x4,800 optical resolution, 35mm, slide transparency adaptor, USB Hi-Speed interface.

Part code 98-155-00010



HOTLIST DIGITAL CAMERA

FUJIFILM

FinePix F10

RATING ★★★★★

PRICE £215 inc VAT

SUPPLIER www.dabs.comDETAILS www.fujifilm.com

FujiFilm's metal-bodied FinePix F10 has a highly sensitive 6-megapixel sensor behind its 3x zoom lens. This makes it excellent for low-light photography. Its battery can run and run, lasting up to 500 shots between charges, and it's the most responsive camera we've tested. It also produces the sharpest photos we've seen from a compact camera.

SPECIFICATIONS 2,848x2,136 resolution, 3x zoom lens (36-108mm), 16MB xD memory. **Part code** N076590A



HOTLIST DIGITAL CAMERA

CANON

PowerShot A510

RATING ★★★★★

PRICE £143 inc VAT

SUPPLIER www.dabs.comDETAILS www.canon.co.uk

Canon has crammed a lot of controls into the A510, but it's still easy to use. It's comfortable to hold and uses standard AA batteries. The 3.2-megapixel camera has a 4x optical zoom and produces clear and vivid photos in automatic mode. Slip it into manual mode, though, and you can set the aperture and shutter speed, which is unusual for such an inexpensive camera.

SPECIFICATIONS 2,048x1,536 resolution, 4x optical zoom, 16MB SD memory. **Part code** 9717A007AA





REVIEW DIGITAL CAMERA

HP
Photosmart R817

RATING ★★★★★

PRICE £205 inc VAT

SUPPLIER www.misco.co.ukDETAILS www.hp.co.uk

The Photosmart R817 is the first HP camera to look and feel like photography equipment rather than a computer gadget. The smooth moulded matt finish and textured black band oozes class and makes the R817 very comfortable to use. This impression is reinforced by a slick, responsive interface. It's easy to navigate through the available controls and shooting options.

A button on the shoulder cycles through the eight scene modes, aperture and shutter priority as well as full manual mode and a setting for making panoramas from several photos. The latter is well executed and makes the process quick, accurate and easy. Auto focus is reliable, but you can switch to manual if you prefer to line up your own shots. There is also a two-step macro mode and infinity focus for landscape shots.

Next to the well-placed shutter button is a separate movie record button. Movies are recoded at 30fps and a resolution of 640x480, so they look detailed and smooth. Although you can use the full range of zoom while shooting, the whine of the zoom motor is clearly audible.



The 5x Pentax zoom lens enables you to make full use of the 5-megapixel sensor. Photos are well exposed and colours generally well balanced, with just the right level of warmth. The R817's only real failing is that it struggles to resolve fine detail on textured surfaces. Grass and brickwork can take on a slightly painted look. You can adjust the on-camera sharpening, along with saturation and contrast, but this failed to resolve the problem fully.

HP has finally produced a proper camera. Despite its failings, the R817 is a reliable camera with an excellent interface.

David Ludlow



Superb interface; 5x zoom



Low light photographs are plagued by noise; soft textures

SPECIFICATIONS 2,592x1,936 resolution, 5x zoom lens (36-180mm equivalent), 32MB internal memory, takes SD memory cards. **Part code** L2031APR B13

REVIEW DIGITAL CAMERA

PENTAX
S5z

RATING ★★★★★

PRICE £204 inc VAT

SUPPLIER www.dabs.comDETAILS www.pentax.co.uk

The S5z is the smallest of four new additions to Pentax's Optio range of digital compact cameras. The attractive metal body houses a 5-megapixel sensor mounted behind a 2.9x zoom lens. It's about the same size as a pack of cards, and even with the battery and memory card installed, it weighs only 165g. This means you can carry it around in your pocket comfortably.

Most of the S5z's back panel is occupied by a bright if relatively low-resolution 2½" LCD screen. This is great for framing your shots, but to review them in detail you need to resort to a computer. The large screen leaves little room for control buttons, which are small and a little fiddly, even for the fine fingered. The control system isn't the easiest to get to grips with, but a fool-proof mode enables even beginners to take decent photos.

The S5z records images at a maximum of 2,560x1,920 pixels, which is fine for prints at 300dpi up to 8x6". The camera produces crisp photos, but noise is ever-present in dark areas. This is particularly true of low light and flash photography, because the flash lacks power and is incapable of illuminating objects and people more than 2½m away. Exposure is well judged, although

colours tend to be a little vibrant. You can tone these down on-camera, though.

The S5z is up against stiff competition at this price, but many other cameras sacrifice lens quality – and therefore image quality – for the sake of compactness, or are considerably bigger. Pentax has struck a better balance than most. However, its image quality, especially in low light, leaves something to be desired. We like this camera's compact design, and if that is key to your buying decision the S5z is a good bet. Otherwise, go for something a bit bigger such as HP's R817 (reviewed above).

David McKinnon



Huge screen; lightweight



Fiddly buttons; slow between shots

SPECIFICATIONS 2,560x1,920 resolution, 3x zoom lens (35.6-107mm equivalent), takes SD memory. **Part code** L2031APR B13

CHOOSING A...

DIGITAL
CAMERA

Follow our step-by-step guide to identify your ideal camera

1 A digital camera with the specifications in grey below will suit someone looking for a point-and-click camera that produces images that look decent when printed at 6x4". It has a TFT screen for previewing, reviewing and deleting shots and for changing settings. Such cameras cost around £100. Cheaper models are available, but their basic quality means they are best avoided.

2 An additional optical viewfinder allows you to take pictures when strong sunlight makes the TFT screen hard to see. You can also preserve batteries by switching the screen off.

3 The camera's top resolution depends on the size of its CCD sensor. A two-megapixel camera produces 1,600x1,200 photos, but with higher resolutions you can enlarge photos without making them blocky. Three megapixels is common, and you can get five or more without spending a bomb.

4 A digital zoom only guesses the extra detail required to zoom in on a subject. Far better is an optical zoom with a moving lens that enlarges the image as it hits the CCD. The lens should also have a quick and accurate auto-focus.

5 Serious photographers need manual control over focus, aperture, shutter speed and white balance and, ideally, plenty of buttons for quick access. Many cameras offer preset modes to improve results.

6 Consider hidden costs. Most cameras will require a memory card upgrade to at least 64MB if they are to hold more than a dozen pictures at a time. Some come with internal rechargeable batteries, making the camera compact, while some accept AA batteries, allowing you to carry spares.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

RESOLUTION: 2,046x1,536 pixels

ZOOM: 2x optical

MONITORING: 1" colour TFT screen

SUPPLIED MEMORY: 16MB

BATTERIES: Disposable